

## Dr. Duke's Phytochemical and Ethnobotanical Databases

### List of Plants for CUMINALDEHYDE

| Plant                    | Part          | Low PPM | High PPM | StdDev               | Reference   |
|--------------------------|---------------|---------|----------|----------------------|---|
| Acacia farnesiana        | Flower        |         |          |                      | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.  |
| Acacia farnesiana        | Plant         |         |          |                      | --  |
| Achillea millefolium     | Leaf          | 0.3     | 11.0     | -0.8843635097531161  | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.  |
| Aegle marmelos           | Leaf          |         | 300.0    | 1.8036997455965955   | --  |
| Artemisia herba-alba     | Plant         |         |          |                      | --  |
| Artemisia annua          | Leaf          |         |          |                      | Father Nature's Farmacy: The aggregate of all these three-letter citations.   |
| Artemisia annua          | Shoot         | 4.0     | 160.0    | 0.5953580799824844   | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M. (Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.1991pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Artemisia salsolooides   | Shoot         |         | 1000.0   | 5.4312546268770925   | V. Kaul, P. Weyerstahl, H. Wahlberg, H. Marschall, (1992); Volatile constituents of the essential oil and the absolute of Artemisia salsolooides Willd. from Ladakh, Flavour and Fragrance journal, Vol.7, 299-305.   |
| Calamintha nepeta        | Leaf          |         |          |                      | Akgul, A., De Pooter, H.L., and De Buyck, L.F. 1991. The Essential Oils of Calamintha nepeta subsp. glandulosa and Ziziphora clinopodioides from Turkey. J. Ess. Oil Res., 3: 7-10.   |
| Carum carvi              | Plant         |         |          |                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Carum carvi              | Essential Oil |         | 370000.0 | 1.0                  | --  |
| Chrysanthemum parthenium | Shoot         |         | 0.0      | -0.32576507180696485 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.  |

| Plant                   | Part                | Low PPM  | High PPM | StdDev               | Reference  |
|-------------------------|---------------------|----------|----------|----------------------|--|
| Cinnamomum verum        | Stem Bark           |          |          |                      | --   |
| Cinnamomum verum        | Leaf                |          | 9.4      | -0.8992455208553981  | Mallavarupu, G. R. et al. 1995. Investigation of the essential oil of cinnamon leaf grown at Bangalore and Hyderabad. Flav. & Fragr. J., 10: 239-242.                                |
| Cinnamomum camphora     | Plant               |          |          |                      | --   |
| Cinnamomum aromaticum   | Bark                |          |          |                      | Wealth of India.   |
| Cinnamomum verum        | Bark Essent. Oil    |          | 2500.0   |                      | --   |
| Cinnamomum aromaticum   | Plant               |          |          |                      | --   |
| Cinnamomum verum        | Root Bark           |          |          |                      | --   |
| Cinnamomum verum        | Bark                | 4.0      | 100.0    |                      | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.   |
| Cnicus benedictus       | Shoot               |          |          |                      | Jim Duke's personal files.   |
| Commiphora myrrha       | Essential Oil       |          |          |                      | --   |
| Commiphora myrrha       | Resin, Exudate, Sap |          |          |                      | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.   |
| Cuminum cyminum         | Seed                | 4000.0   | 16000.0  |                      | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.   |
| Cuminum cyminum         | Fruit               | 4000.0   | 16000.0  | 1.0                  | --   |
| Cuminum cyminum         | Seed Essent. Oil    | 205100.0 | 480000.0 |                      | --   |
| Cuminum cyminum         | Essential Oil       |          | 350000.0 | -1.0                 | --   |
| Daucus carota           | Seed                |          |          |                      | --   |
| Eruca sativa            | Hs                  |          |          |                      | --   |
| Eucalyptus blakelyi     | Shoot               |          | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus siderophloia | Shoot               |          | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |

| Plant                   | Part  | Low PPM | High PPM | StdDev               | Reference  |
|-------------------------|-------|---------|----------|----------------------|--|
| Eucalyptus polyanthemos | Shoot |         | 50.0     | -0.037914086872762   | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus oviformis    | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus melliodora   | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus globulus     | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus cladocalyx   | Shoot |         | 43.0     | -0.0782132247635504  | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus botryoides   | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus sp           | Plant |         |          |                      | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.                               |
| Eucalyptus astringens   | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus saligna      | Shoot |         | 16.0     | -0.23365275662801993 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |

| Plant                   | Part  | Low PPM | High PPM | StdDev               | Reference  |
|-------------------------|-------|---------|----------|----------------------|--|
| Eucalyptus occidentalis | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus maidenii     | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus diversicolor | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus globulus     | Leaf  | 25.0    | 135.0    | 0.2689923506737498   | --   |
| Eucalyptus citriodora   | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus bosistoana   | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus sideroxylon  | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus albens       | Shoot |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |
| Eucalyptus punctata     | Shoot |         | 110.0    | 0.30750709504828155  | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264. |

| Plant                           | Part   | Low PPM | High PPM | StdDev               | Reference  |
|---------------------------------|--------|---------|----------|----------------------|--|
| <i>Eucalyptus moluccana</i>     | Shoot  |         | 325.0    | 1.5452663302653538   | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. <i>Journal of Essential Oil Res.</i> 4: 259-264.  |
| <i>Eucalyptus maculata</i>      | Shoot  |         | 0.1      | -0.32518936983709645 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. <i>Journal of Essential Oil Res.</i> 4: 259-264.  |
| <i>Eucalyptus dealbata</i>      | Shoot  |         | 125.0    | 0.3938623905285424   | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. <i>Journal of Essential Oil Res.</i> 4: 259-264.  |
| <i>Eucalyptus tereticornis</i>  | Shoot  |         | 40.0     | -0.09548428385960256 | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. <i>Journal of Essential Oil Res.</i> 4: 259-264.  |
| <i>Eucalyptus camaldulensis</i> | Shoot  |         | 22.0     | -0.1991106384359156  | Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. <i>Journal of Essential Oil Res.</i> 4: 259-264.  |
| <i>Ferula jaeschkeana</i>       | Fruit  |         | 494.0    | -1.0                 | --   |
| <i>Hyssopus officinalis</i>     | Shoot  | 4.0     | 7.0      | -0.2854659339161764  | Indian Perfumer, 35: 52.   |
| <i>Lavandula latifolia</i>      | Plant  | 3.0     | 42.0     | -1.0                 | Lawrence, B.M., <i>Essential Oils 1976-1977</i> , <i>Essential Oils 1978</i> , <i>Essential Oils 1979-1980</i> .   |
| <i>Lavandula x hybrida</i>      | Shoot  | 5.0     | 8.0      | -0.2797089142174924  | Tucker, A.O., Maciarello, M.J., Angell, S., Espaillat, J.R., and French, E.C. 1993. <i>The Essential Oil of Lavandula x hybrida Balb. ex Ging., a Distinct Hybrid from L. x heterophylla Poir. (Labiatae).</i> <i>J. Ess. Oil Res.</i> 5: 443-445. |
| <i>Lavandula angustifolia</i>   | Flower |         |          |                      | Lawrence, B.M., <i>Essential Oils 1976-1977</i> , <i>Essential Oils 1978</i> , <i>Essential Oils 1979-1980</i> .   |
| <i>Lavandula x intermedia</i>   | Plant  |         |          |                      | Lawrence, B.M., <i>Essential Oils 1976-1977</i> , <i>Essential Oils 1978</i> , <i>Essential Oils 1979-1980</i> .   |
| <i>Monarda fistulosa</i>        | Plant  | 1.0     | 62.0     | 1.0                  | Lawrence, B.M., <i>Essential Oils 1976-1977</i> , <i>Essential Oils 1978</i> , <i>Essential Oils 1979-1980</i> .   |

| Plant                 | Part   | Low PPM | High PPM | StdDev               | Reference  |
|-----------------------|--------|---------|----------|----------------------|--|
| Nepeta racemosa       | Shoot  |         | 34.0     | -0.1300264020517069  | Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.                 |
| Nepeta racemosa       | Shoot  |         | 34.0     | -0.1300264020517069  | Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.                 |
| Origanum minutiflorum | Shoot  |         | 5.0      | -0.29697997331354453 | Baser, K.H.C., Tumen, G., Sezik, E. 1991. The Essential Oil of Origanum minutiflorum O. Schwarz and P.H. Davis. J. Ess. Oil Res. 3: 445-446.               |
| Peumus boldus         | Leaf   | 16.0    | 75.0     | -0.2890830656618304  | --   |
| Pinus mugo            | Leaf   |         |          |                      | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.   |
| Pinus sylvestris      | Leaf   |         |          |                      | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.                                 |
| Salvia sclarea        | Plant  |         |          |                      | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.                             |
| Stevia rebaudiana     | Flower |         |          |                      | Kinghorn, A. D. (Ed.) 2002. Medicinal and Aromatic Plants - Industrial Profiles. Stevia. The genus Stevia. Taylor & Francis. New York, NY. 211 pp.         |
| Stevia rebaudiana     | Leaf   |         |          |                      | Kinghorn, A. D. (Ed.) 2002. Medicinal and Aromatic Plants - Industrial Profiles. Stevia. The genus Stevia. Taylor & Francis. New York, NY. 211 pp.         |
| Syzygium aromaticum   | Fruit  |         |          |                      | --   |
| Tanacetum parthenium  | Shoot  |         | 0.0      | -0.32576507180696485 | Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71. |

| Plant              | Part  | Low PPM | High PPM | StdDev               | Reference  |
|--------------------|-------|---------|----------|----------------------|--|
| Thymus longicaulis | Shoot |         | 0.0      | -0.32576507180696485 | Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of Thymus longicaulis C. Presl subsp. longicaulis in the same Population. J. Ess. Oil Res. 5: 291-5. |
| Thymus longicaulis | Shoot |         | 0.0      | -0.32576507180696485 | Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of Thymus longicaulis C. Presl subsp. longicaulis in the same Population. J. Ess. Oil Res. 5: 291-5. |
| Thymus longicaulis | Shoot |         | 0.0      | -0.32576507180696485 | Baser, K.H.C., Ozek, T., Kirimer, N. and Tumen, G. 1993. The Occurrence of Three Chemotypes of Thymus longicaulis C. Presl subsp. longicaulis in the same Population. J. Ess. Oil Res. 5: 291-5. |